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Institute for School Development Research (IFS)

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Identifying influences of school- and system level factors on student achievement – The German national project of The European Collaborative Research Project ADDITION

International Congress for School Effectiveness and Improvement (*ICSEI) 2011*, Limassol, Cyprus
January 4th – 7th, 2011

Structuring:

1. Focus of the German national project
2. Design and methods
3. Outlook

1. Focus of the German national project

Research questions

1) Can we find relationships between effective leadership, teacher cooperation and teaching practice in classrooms?

2) Does it make a difference concerning teaching quality, whether teachers are participating in institutionalised teams with characteristics of professional learning communities?

3) Is professional learning in teacher teams able to influence learning achievements of students over time of one school year?

4) Which process factors of developmental work have an impact on improvement of teaching practice and student`s achievements?

5) Are different teaching arrangements able to reduce the relation between student`s achievements and social background? What kind of role does the composition of pupils on classroom level play?

Assumptions concerning teaching development

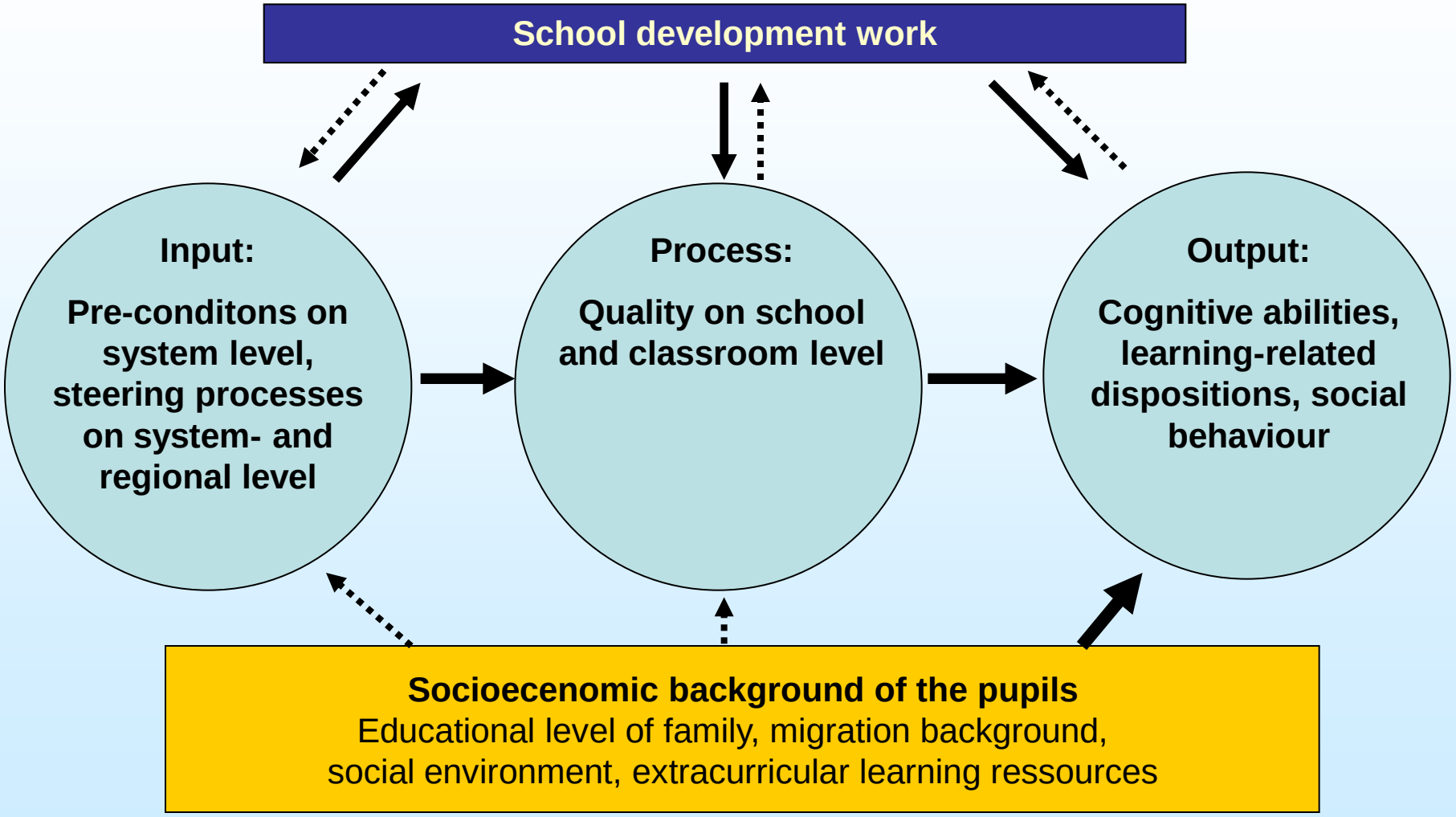
- Effective leadership patterns with focus on teaching and instruction is closely related to a high readiness of innovation and intensive development of teaching.

- Teacher collaboration in institutionalised teams with characteristics of professional learning communities is able to enhance systematic school development and improvement of teaching

- Goal orientated and professional teamwork with focus on student learning can contribute to added value on student`s achievements

- Schools with systematical and goal orientated development strategies (school program work, self-evaluation, teacher trainings etc.) are able to enhance teaching quality over time

Model of research for school quality



2. Design and methods

Sample

- Sample
  - Each participating country 50 up to 60 schools with about 1.500 - 3.000 pupils, all teachers
  - Germany: 54 schools with about 1.500 pupils, all teachers
    - national addition: all headmasters and parents

Instruments and analyzing methods

- Achievement test
  - Test booklets with released items from TIMSS 2007 (mathematics and natural science), Development of pupils‘ achievement within one year in school (beginning and end of grade 4)
- System level
  - Half standardised interviews with stakeholders of education policy
  - Content analysis of documents concerning school policy (curriculum, guidelines, etc.)
- Headmastes, teachers, pupils, parents
  - Standardised questionnaires

- Multi-level analyses
- Triangulation of qualitative and quantitative data

We created a ‚Social Index' for an adequate measurement of the pupils' socioeconomic background. Further development of this index with the teams from Ireland and Cyprus for the ESF project:

Instrument is based on Bourdieu's dimensions:

Economic & Cultural Capital:

- e.g. In your home, do you have? (A newspaper, A second car, A gardener etc.)
- About how many books are there in your home?

Social Capital:

- e.g. My parents always know where I go after school, I tell my parents about my friends and our activities
- e.g. Migration background
- e.g. What language do you speak at home most of the time?

Measurements: culture of organisation

- readiness for innovation of the staff
- goal orientated leadership
- leadership related to teaching practice
- management competencies of headmasters
- intensity of teacher cooperation
- involvement of teachers in institutionalised teams
- time space for cooperation (team time)
- activities and chracteristics of teamwork (concerning basical dimensions of professional learning communities: shared goals, deprivatization, reflexive dialogue and analysis, focus on student learning, efforts für effectice teaching)
- goals and benefits of teamwork for teachers (support, learning opportunities, capacitybuilding for change through analysis and diagnosis, improvement of teaching quality)

Measurements: school development work

- intensity of developmental efforts
- use of systematical and goal orientated activities within school program work
- participation of teachers in school program work
- intensity of practice on internal evaluation
- perception of effects on teaching and on school level
- development activities after data feedback from periodical student assessment
- development activities after feedback from exetrnal evaluation/ inspection report
- goal orientated steering by steering committee
- special practices on teaching development
- school policy and stratregies for teaching improvement

Influence factors on school level

- Validation and evaluation of arrangements concerning the learning environment:
  - Are there guidelines in school for the development of teaching?
  - Which arrangements of organisational culture contribute to the improvement of teaching?
  - How does the school support the establishment of a conducive learning environment?

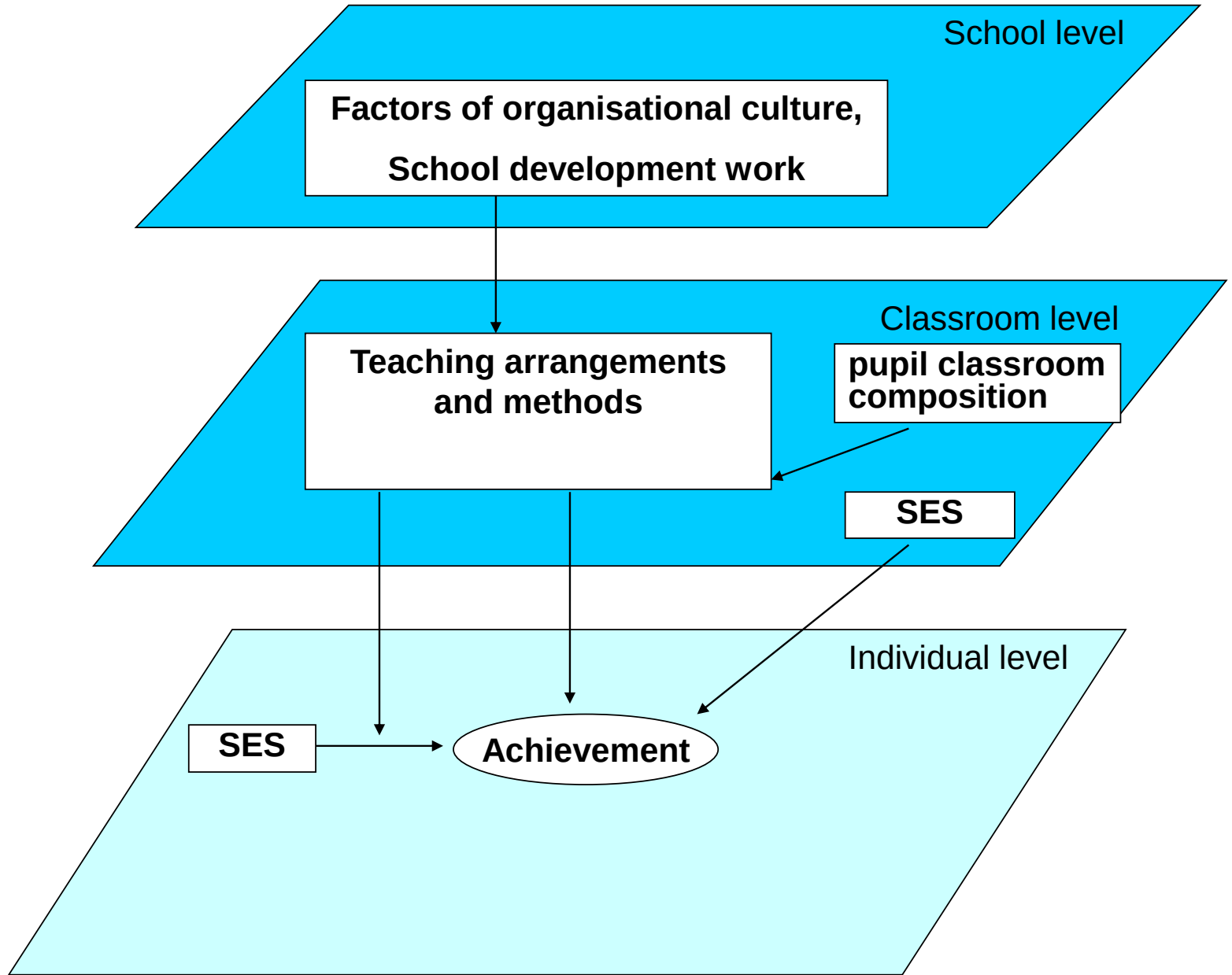
Influence factors on classroom level

- Role of the teacher in arranging and developing of teaching
  - Methodical approach and structuring of teaching
  - Steering of learning and teaching processes
  - Differentation and support for learning
  - Time management in teaching
  - Creating learning climate in classroom

Influence factors on individual level

- Socioeconomic status of pupils
- Structure of labour force and prosperity in the familiar environment
- Motivation with regard to subjects and self-concept
- Analyses on learning processes, pupils´ abilities, use of learning possibilities

Research Model



3. Outlook

- Delivery of first data in January 2011 → Cross-sectional analyses
- Second Measurement in June 2011
- Longitudinal analyses
- Final report to be finished until September 2012

Thank you very much for your attention!

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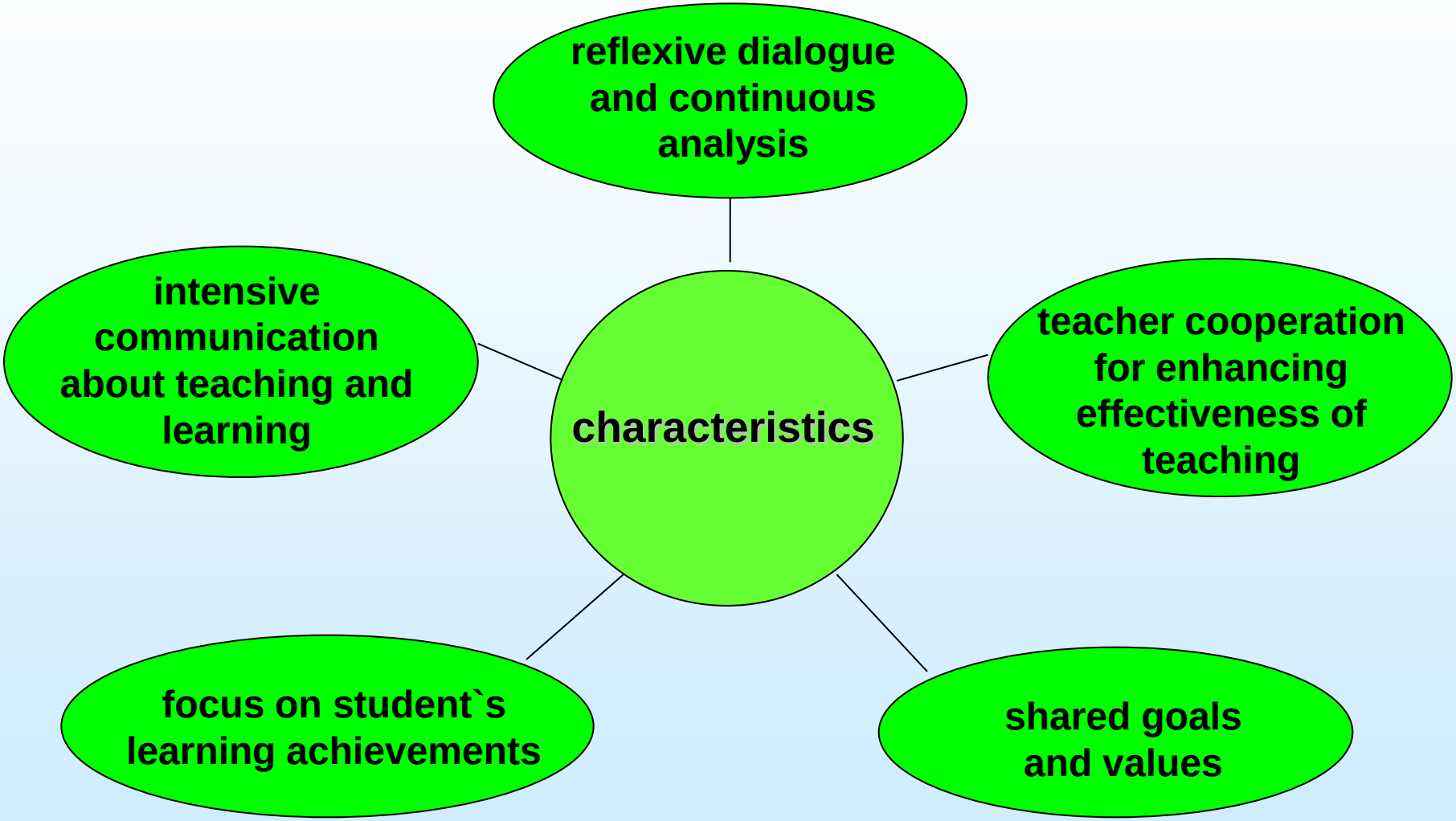
Goals for working in teams as professional learning communities

- Reducing isolation through intensive communication
- Enhancing the capacity for development of teacher staff with regard to pedagogical work and problem-solving
- Creating a supportive and productive environment for teachers
- Giving opportunities for further learning
- Common efforts for improvement of organizational and teaching quality

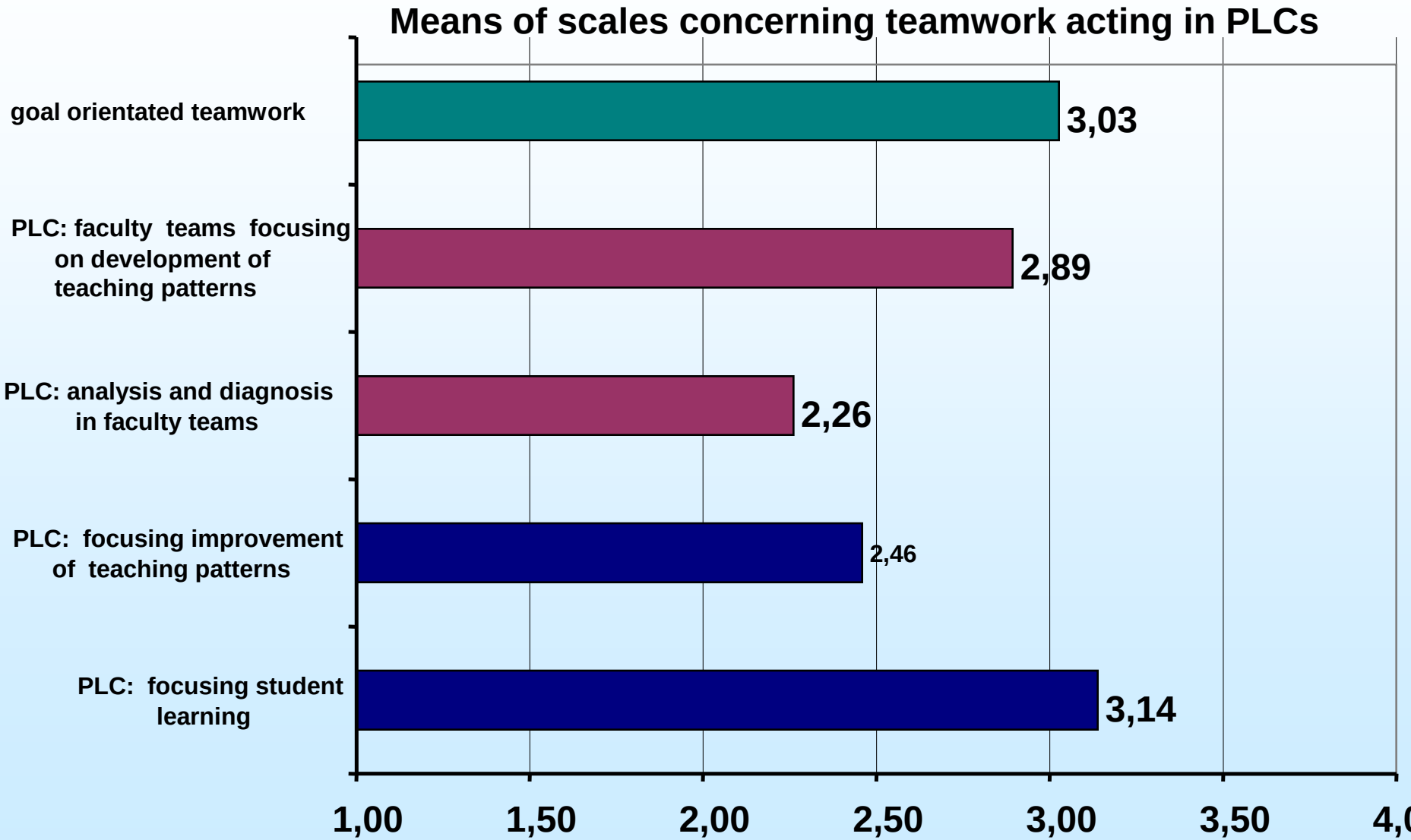
(reference: Hall/Hord 2001)

Characteristics of professional learning communities

(based on: Leithwood 2000)



Acting as professional learning communities: Quality of professional teamwork of teachers in institutionalized teams

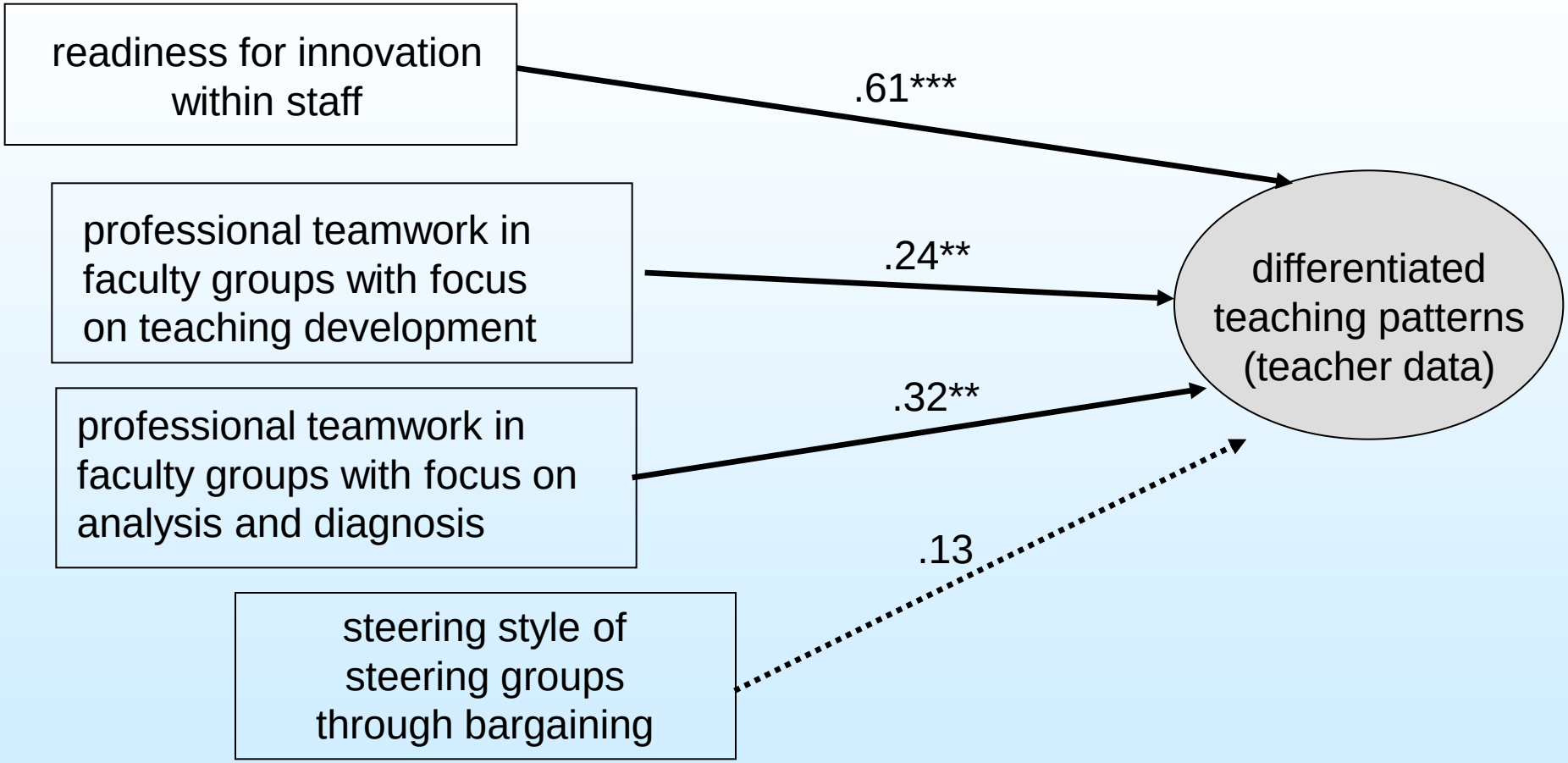


Relationships between teacher trainings and teaching patterns results on school level (n=69) - regression coefficients/explained variance

patterns of teaching and learning in classroom	Teach.training R	Teach.training R^2	Teach.train. + PLC R	Teach.train. + PLC R^2
student orientated teaching	.33*	(10,9%)	.73*	(53,9%)
internal differentiation	.12	(1,4%)	.54*	(29,1%)
arrangement for self-regulated learning	.15	(2,2%)	.38*	(14,6%)
students work with self-chosen exercises	.25*	(6,3%)	.57*	(31,9%)
students present learning results	.16	(2,6%)	.23*	(5,2%)
students on task working in groups	.27*	(7,3%)	.30*	(8,8%)

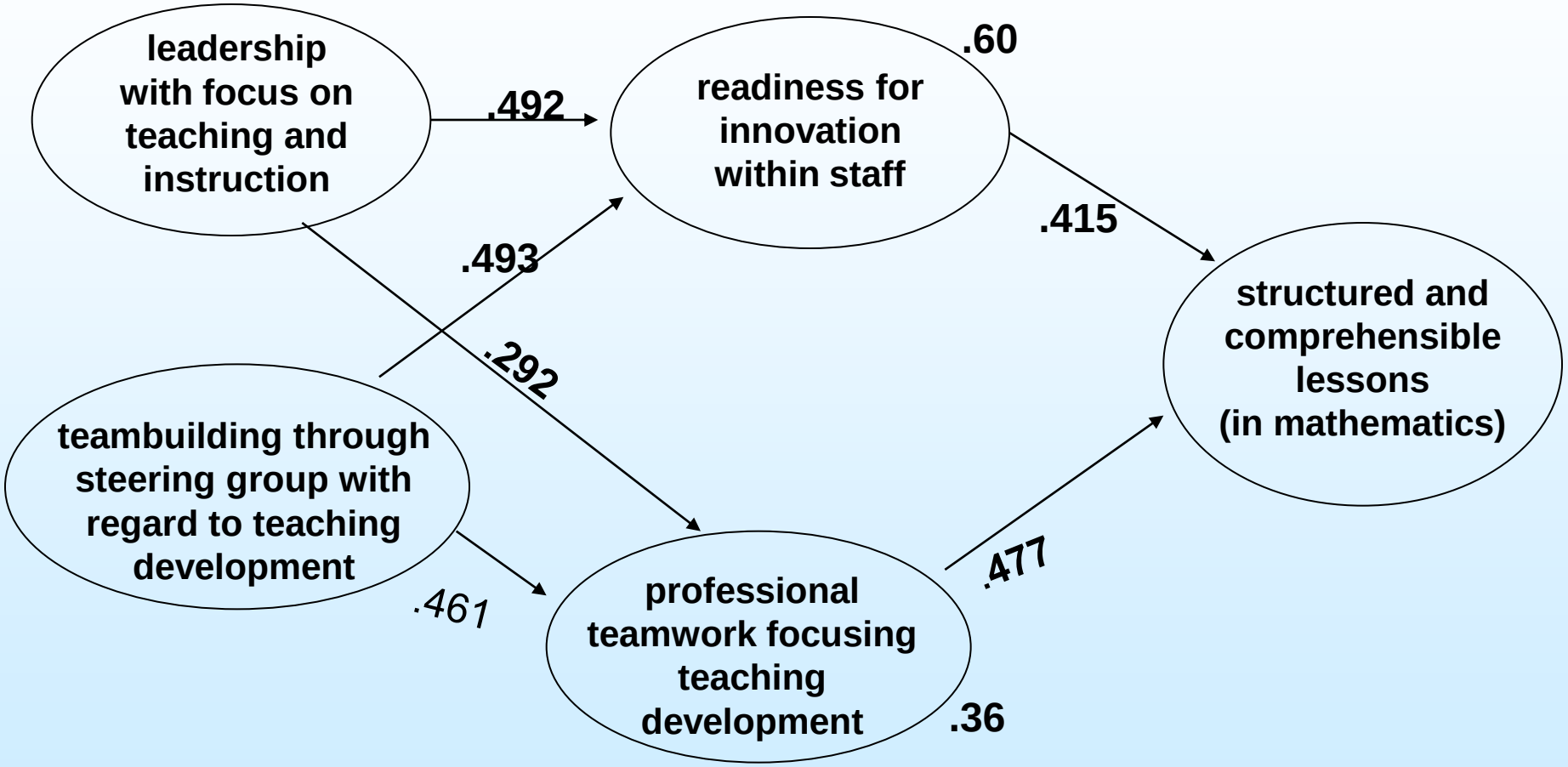
n = 69 schools (teacher data aggregated on school level); Signific.: * p<.05

Impact of process variables on quality of teaching - result of multiple regression (beta-values) on school level



Multiple R= .822 / explained variance = 68 % / Signific.: ** p<.01, ***p<.001
n = 42 schools (teacher data aggregated on school level)

Impacts of leadership competencies and acting of steering groups on quality of teaching in mathematic lessons



Structural Equation Model (teacher data 2007 aggregated on school level)
(CFI= 0,943, TLI= 0,934, RSMEA = 0,081, Chi²/DF = 1,46, n=70)

Project Self-managing Schools; Feldhoff 2008